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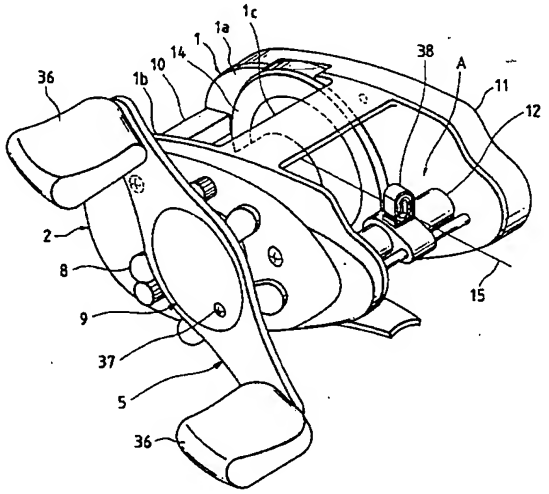
## (54) Fishing reel.

(57) The invention concerns a fishing reel which prevents fingers against damage even if they accidentally touch a loosening preventive member (9) during the winding operation of a handle (5), prevents a bait, dust and the like from sticking to the loosening preventive member as much as possible, and prevents a fishline from getting twined around the loosening preventive member (9). The handle (5) is threadedly fixed to the end portion of a drive shaft (4) by a threaded member (35), and the loosening preventive member (9) for preventing the threaded member 35 from loosening is fixed to the handle (5). The surface of the loosening preventive member (9), which is to be mounted to the upper surface (5a) of the handle (5), extending from the peripheral edge portion of the member (9) to the central portion thereof is formed in a smooth surface (9a).

FIG. 1

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## BACKGROUND OF THE INVENTION

The present invention relates to a fishing reel in which a handle is threadedly fixed to the end portion of a drive shaft adapted to drive a spool for taking up or winding a fishline, by use of a threaded member.

Conventionally, a handle to be mounted to the end portion of a drive shaft is fastened and fixed by a nut to which is mounted a loosening preventive member for preventing the nut from loosening. As examples of such loosening preventive member for preventing the loosening of the nut, there are disclosed in Japanese Utility Model Kokai Publication No. Sho. 55-108873 and Japanese Utility Model Kokai Publication No. Hei. 3-74266 loosening preventive members which are respectively mounted and fixed to the handle in such a manner that they project out from the upper surface of the handle.

The loosening preventive members disclosed in the above-mentioned publications are both so structured as to project from the upper surface of the handle and, therefore, fingers may accidentally touch the loosening preventive member and be damaged during the winding operation of the handle. Further, the slime of fish, a bait, dust and the like are easy to stick to the loosening preventive member. Furthermore, a fishline may be entwined or tangled around the loosening preventive member.

## SUMMARY OF THE INVENTION

In view of the problems found in the conventional fishing reel, it is an object of the invention to provide an arrangement for a fishing reel, which prevents fingers against damage even if they accidentally touch a loosening preventive member during the winding operation of a handle, prevents a bait, dust and the like from attaching to the loosening preventive member as much as possible, and prevents a fishline from being entwined around the loosening preventive member so that pleasant fishing can be realized.

In order to attain the above-noted and other objects, according to the invention, there is provided a fishing reel in which a handle is threadedly fixed by a threaded member to the end portion of a drive shaft to drive a spool for winding and a loosening preventive member to prevent the threaded member from loosening is fixed to the handle, characterized in that the surface of the loosening preventive member extending from the peripheral edge portions thereof to the central portion thereof is formed in a smooth shape.

Also, according to the invention, there is provided a fishing reel in which a handle is threadedly fixed by use of a threaded member to the end portion of a drive shaft to drive a spool for winding and a loosening preventive member to prevent the threaded member from loosening is fixed to the handle, characterized in that a cover member to cover the loosening preventive member is fixed to the upper surface of the handle and also the surface of the loosening preventive member extending from the peripheral edge portions thereof to the central portion thereof is formed in a smooth shape.

According to the invention, the loosening preventive member to be mounted to the upper surface of the handle is structured such that the surface thereof extending from the peripheral edge portions thereof to the central portion thereof is formed in a smooth shape in order to prevent a fishline, a finger, a bait and the like from getting caught on the loosening preventive member when the fishing reel is operated. Or, a cover member is so fixed to the upper surface of the handle as to cover the loosening preventive member and the cover member is structured such that the surface thereof extending from the peripheral edge portion thereof to the central portion thereof is formed in a smooth shape in order to prevent a fishline, a finger, bait and the like from getting caught on the loosening preventive member when the fishing reel is operated.

## BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings:

Fig. 1 is a perspective view of a first embodiment of the invention, in which a dual bearing type fishing reel is used as a fishing reel;

Fig. 2 is a plan view of a handle portion shown in Fig. 1;

Fig. 3 is a sectional side view of the handle portion shown in Fig. 1;

Fig. 4 is an enlarged sectional plan view of the main portions of the dual bearing type reel shown in Fig. 1;

Fig. 5 is a sectional side view of a handle portion of a fishing reel according to a second embodiment of the invention;

Fig. 6 is a sectional side view of a handle portion of a fishing reel according to a third embodiment of the invention;

Fig. 7 is a sectional side view of a handle portion of a fishing reel according to a fourth embodiment of the invention;

Fig. 8 is a sectional side view of a handle portion of a fishing reel according to a fifth embodiment of the invention;

Fig. 9 is a plan view of a handle portion of a fishing reel according to a sixth embodiment of the invention;

Fig. 10 is a sectional side view of the handle portion shown in Fig. 9;
Fig. 11 is a plan view of a handle portion of a fishing reel according to a seventh embodiment of the invention;
Fig. 12 is a sectional side view of the handle portion shown in Fig. 11;
Fig. 13 is a sectional side view of a handle portion of a fishing reel according to an eighth embodiment of the invention;
Fig. 14 is a sectional side view of a handle portion of a fishing reel according to a ninth embodiment of the invention;
Fig. 15 is a sectional side view of a handle portion of a fishing reel according to a tenth embodiment of the invention;
Fig. 16 is a plan view of a handle portion of a fishing reel according to an eleventh embodiment of the invention, in which a cover member mounted to the handle portion is cut away;
Fig. 17 is a sectional side view of the handle portion shown in Fig. 16;
Fig. 18 is a side view of a handle portion of a fishing reel according to a twelfth embodiment of the invention;
Fig. 19 is a sectional view taken along line 19-19 of Fig. 18; and
Fig. 20 is a plan view of the handle portion shown in Fig. 18.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Now, description will be given below of embodiments of a fishing reel according to the invention. In particular, Figs. 1 through 4 respectively show a first embodiment of a fishing reel according to the invention. In the description of the embodiments of the invention, as a fishing reel, there is used a dual bearing type reel. Specifically, Fig. 1 is a perspective view of a dual bearing type reel, Fig. 2 is a plan view of a handle portion of the dural bearing type reel, Fig. 3 is a sectional side view of the handle portion, and Fig. 4 is an enlarged sectional plan view of the main portions of the dual bearing reel shown in Fig. 1.

A reel main body 1 includes two right and left side frames 1a and 1b which are held in parallel to each other by a plurality of support members 10 and a hold plate 1c. And, reel side plates 11 and 2 are respectively mounted to the outsides of the side frames 1a and 1b. The two end portions of a guide cylinder 12 provided in a fishline guide device A are respectively mounted to the two side frames 1a and 1b by means of structures (not shown) in such a manner that they are prevented against rotation. Also, a spool shaft 3 is rotatably supported on the two side frames 1a and 1b through bearings (only one bearing 13 is shown in Fig. 4) and the spool shaft 3. The spool shaft 3 can be rotated by a handle 5 mounted to a drive shaft 4 through a clutch mechanism and a gear train mechanism. A spool 14, which is to be interposed between the two right and left side frames 1a and 1b, is fixed to the spool shaft 3 and a fishline 15 is wound around the outer periphery of the fishline winding barrel of the spool shaft 3.

Between the right side plate 1b located on the right of the bearing 13 and the small diameter portion 3a of the spool shaft 3, there is fitted a pinion 6 in such a manner that it is free to move in the axial direction thereof. The spool shaft 3 includes an engaging portion 3b, while the pinion 6 includes an engaging portion 6a. Engagement and disengagement between the engaging portions 3b and 6a is executed by a clutch plate 16 fitted into a peripheral groove 6b formed in the pinion 6. That is, the clutch mechanism is made up of the engaging portion 3b of the spool shaft 3, the engaging portion 6a of the pinion 6, and the clutch plate 16 fitted into the peripheral groove 6b of the pinion 6. Also, a drive gear 17 rotatably fitted with the drive shaft 4 is in mesh with the pinion 6.

A shaft cylinder portion 1c is projectingly formed on the left inner side of the right side frame 1b and a through hole 1d and recessed portions 1e, 1f are formed inside the shaft cylinder portion 1c. The bearing 13 is fitted into and mounted to the recessed portion 1e, a tongue piece 7a of a hold member 7 is secured into the recessed portion 1f, and thus the bearing 13 is prevented against removal by the hold member 7. On the other hand, a recessed portion 1g is formed on the right outer side of the right side frame 1b, a bearing 18 is fitted into the recessed portion 1g, and one end 4a of the drive shaft 4 is also rotatably fitted into the recessed portion 1g and is prevented against removal by a removal preventive plate 19.

The reel side plate 2 includes a through hole 2a and recessed portions 2b, 2c. A bearing 20 is fitted into and mounted to the recessed portion 2b, the tongue piece 7a of the hold member 7 is secured into the recessed portion 2c, and thus the bearing 20 is prevented against removal by the hold member 7. The other end 3c, which has a small diameter, of the spool shaft 3 is supported on the bearing 20. Also, on the right outer side of the reel side plate 2, there is projectingly provided a shaft cylinder portion 2d which includes an external thread on the outer periphery thereof. With the external thread of the shaft cylinder portion 2d, there is threadedly engaged a cover knob 21 with a thrust bearing 22 fixed to the inner bottom surface thereof, while the other end 3c having a small diameter of the spool shaft 3 is in contact with the thrust bearing 22.

The reel side plate 2 further includes a through hole 2e and recessed portions 2f, 2g. A bearing 23 is fitted into and mounted to the recessed portion 2f and a tongue piece 7a of a hold member 7 having the same shape as the above-mentioned hold member 7 is secured into the recessed portion 2g, so that the bearing 23 is prevented against removal by the hold member 7. On the bearing 23, there is supported the drive shaft through a collar 24 which is fitted with the drive shaft 4 in such a manner that it is free to move in the axial direction of the drive shaft 4 but is prevented against rotation.

A friction plate 25 is fitted with the portion of the drive shaft 4 located on the left of a drive gear 17 which is rotatably fitted with the drive shaft 4 and, a ratchet wheel 26 is non-rotatably fitted at the left side of the friction plate 25 with the drive shaft 4. And, a friction plate 27 is fixed to the right side of the drive gear 17 and a friction disk 28 is non-rotatably fitted with the drive shaft 4 in such a manner as to be abutted against the friction plate 27. A curved spring 29 is inserted between the drive gear 17 and friction plate 28 and a pressure board 30, which is fitted with the drive shaft 4 in a rotation preventive manner, is abutted against the right side of the friction disk 28. Springs 31, 32, which are prevented against rotation by the drive shaft 4, are abutted against the right side of the pressure board 30 and the collar 24 is in contact with the right side of the spring 32. An engaging portion 8a of an adjust member 8 is in contact with the right side of the collar 24. The above-mentioned friction plate 27, friction disk 28, curved springs 31, 32, collar 24 cooperate in forming a brake mechanism.

The above mentioned adjust member 8 includes the engaging portion 8a in contact with the collar 24, a central through hole 8b, an operation portion 8c which can be rotationally operated by fingers, and a polygonal fitting recessed portion 8d formed in the central portion of the adjust member 8. A nut 33, which is threadedly engaged with an external thread portion 4b of the drive shaft 4, is fitted into the polygonal fitting recessed portion 8d. The drive shaft 4 includes a rotation preventive portion 4c and an external thread portion 4d in the other end portion thereof that is located on the right of the nut 33. And, a pressure spring 34 and the handle 5 are fitted with the rotation preventive portion 4c in such a manner that they are respectively prevented against rotation with respect to the drive shaft 4, and also they are prevented against removal by a threaded member 35 which, in this embodiment, is a nut.

The above-mentioned fishline guide device A includes a guide barrel 12, a slider 38 which slides right and left on the outer peripheral of the guide barrel 12, and a traverse cam shaft (not shown) stored in the guide barrel 12. The traverse cam shaft can be rotated by rotationally operating the handle 5. Also, while the engaging portion 3b of the spool shaft 3 is clutch-connected with the engaging portion 6a of the pinion 6 due to the operation of the clutch plate 16, if the handle 5 is rotationally operated, then the spool shaft 3 with the spool 14 mounted thereto is rotated through the drive shaft 4 and gear train mechanism. As a result of this, if the handle 5 is rotationally operated such that the fishline can be taken up, then the fishline can be wound uniformly around the spool 14 or the like by means of the sliding operation of the fishline guide device A. The rotational operation of the handle 5 can be performed by gripping one of handle knobs 36 which are rotatably journaled in respective through holes 5f formed in the end portions of the handle 5.

Next, description will be given below in detail of the structure of a connecting portion between the handle 5 and drive shaft 4. In the handle 5, as shown in Figs. 2 and 3, there is formed a curved surface 5b so that the central area of the upper surface 5a of the handle 5 can be expanded upwardly, and an elliptical recessed portion 5d is formed in the expanded portion. A substantially oval-shaped through hole 5c (having circular portions and straight portions as illustrated by dotted line in Fig. 2) is formed in the central portion of the recessed portion 5d, and a screw hole 5e is formed in the neighborhood of the oval through hole 5c. The above-mentioned rotation preventive portion 4c provided in the other end portion of the drive shaft 4 is fitted into the oval through hole 5c, whereby the handle 5 can be mounted to the drive shaft in such a manner that it is prevented against rotation. An external thread portion 4d is formed in the outer peripheral portion of the rotation preventive portion 4c and the threaded member 35 (i.e. a nut) can be threadedly engaged with the external thread portion 4d. As a result of this, the handle 5 can be fastened and fixed to the drive shaft 4 in such a manner that it is prevented against rotation.

A loosening preventive member 9, which is used to prevent the screw member 35 from loosening, is engaged with the screw member 35. The loosening preventive member 9 is structured as a cover including an elliptical outer shape so that the loosening preventive member 9 can be fitted into an elliptical recessed portion 5d formed in the central area of the upper surface 5a of the handle 5. And, the loosening preventive member 9 includes on the back surface thereof a recessed portion 9b which can be put on the screw member 35 to prevent the loosening of the threaded member 35. The loosening preventive member 9 can be fixed to the handle 5 by threadedly engaging a

screw 37 with the threaded hole 5e.

Also, the loosening preventive member 9 includes a curved surface 9a which expands upwardly in a range extending from the peripheral edge portions of the member 9 to the central portion thereof. Thus, if the loosening preventive member 9 is fixed to the handle 5, then there can be formed a smooth surface which continues with the curved surface 5b of the handle 5, as shown in Fig. 3. In this manner, since the smooth surface continuing with the curved surface 5b of the handle 5 is formed, there is eliminated the possibility that a bait, fingers, dust, or the fishline can be caught in the member 9.

Concretely describing, according to the fishing reel the handle portion of which is structured in the above manner, since the loosening preventive member 9 is mounted and fixed in such a manner that it does not project out greately from the upper surface 5a of the handle 5 and it forms a relatively flat, smooth outer surface, unlike the conventional fishing reel, when the handle 5 is wound quickly, or when fingers happen to slip from the knob 36 due to the water or oil stuck thereto, even if the fingers accidentally touch the neighboring portion of the loosening preventive member 9, the fingers are prevented against damage and a safe and smooth winding operation is possible. Also, the present fishing reel prevents the slime of fish, bait, dust and the like from sticking to the loosening preventive member 9 as much as possible and, even if such things stick to the member 9, they can be wiped off very easily so that the present fishing reel can realize pleasant fishing. Further, since the handle 5 and loosening preventive member 9 provide a unified shape as a whole, the present fishing reel is improved in design as well.

Especially, as in the present embodiment, the loosening preventive member 9 is mounted within the recessed portion 5d formed in the upper surface of the handle 5 so that the upper surface 5a of the handle 5 and the upper surface of the loosening preventive member 9 provide a substantially level and continuous shape without having any stepped portions, whereby it is possible not only to prevent the fishline from being twined but also to prevent fingers from being damaged as much as possible in the peripheral edge portion of the loosening preventive member. Also, since the securing part (in the present embodiment, the screw 37) for fixing the loosening preventive member to the upper surface of the handle is structured such that it does not project from the surface of the loosening preventive member, it is possible to prevent the slime of fish, bait, dust and the like from sticking to the handle more positively.

Next, description will be given below of other embodiments of a fishing reel according to the invention. In each of the embodiments to be described below, only the handle portion thereof is shown.

Fig. 5 is a view of a handle portion of a second embodiment of the invention. In the second embodiment, a loosening preventive member 9 is pressure-fitted into and fixed to an elliptical recessed portion 5d of a handle 5. The upper surface of the loosening preventive member 9, similarly to the previously described embodiment, is formed in a curved surface 9c which provides a smooth surface from the peripheral edge portion thereof to the central portion thereof. In the second embodiment, as shown in Fig. 5, the curved surface 9c is not level with a curved surface 5b of the handle 5 but expands slightly outwardly. Such structure can also provide a similar effect to the above-mentioned embodiment. Also, since no screw or the like is used as a securing part, fixing of the loosening preventive member 9 to the handle upper surface is easy and entrance of a bait, dust and the like into the securing part can also be prevented.

Now, Fig. 6 is a view of a third embodiment of the invention. In the third embodiment, a loosening preventive member 9 is pressure-fitted into and fixed to an elliptical recessed portion 5d of the handle 5. The upper surface of the loosening preventive member 9 is formed in a smooth horizontal surface 9d. This structure can also provide a similar effect to the above-mentioned second embodiment.

Fig. 7 is a view of a fourth embodiment of the invention In the fourth embodiment, a loosening preventive member 9 is pressure-fitted into and fixed to an elliptical recessed portion 5d of the handle 5, and the upper surface of the loosening preventive member 9 is formed in a smooth horizontal surface 9d. In the fourth embodiment, the central curved surface 5g of the handle 5 is formed lower than one in the above-mentioned third embodiment. However, even when a stepped portion of this level exists between the upper surface 5a of the handle 5 and the upper surface of the loosening preventive member 9, the curved surface 5g and the smooth horizontal surface 9d can prevent the fishline from getting twined effectively. Also, more preferably, although not shown, if no curved surface is formed on the upper surface 5a of the handle 5 but the upper surface 5a is formed in a horizontal surface, and a loosening preventive member 9 including a horizontal surface 9d is fitted into the recessed portion 5d of the handle 5 to thereby make the handle 5 and loosening preventive member 9 level with each other, then the fishline and the like cannot be caught at all.

Now, Fig. 8 is a view of a fifth embodiment according to the invention. In the fifth embodiment, it is easier to fix a loosening preventive member 9

to the upper surface of a handle 5. A through hole 5h is formed in the recessed portion 5d of the handle 5 and also, on the back side of the loosening preventive member 9, there is formed an elastically deformable elastic securing portion 9h which is to be inserted into the through hole 5h. According to this structure, the loosening preventive member 9 can be fixed to the handle 5 by one-touch operation and, if the elastic securing portion 9h is held or picked from the lower surface side of the handle 5, then the loosening preventive member 9 can be removed easily. Also, there is eliminated the need to provide an exposed securing portion using a set screw on the surface portion of the loosening preventive member 9 and thus there is no possibility that a bait, dust and the like can stick to the surface portion of the loosening preventive member 9.

Now, in Figs. 9 and 10, there is shown a sixth embodiment according to the invention. In particular, Fig. 9 is a plan view of a handle portion of the sixth embodiment and Fig. 10 is a sectional side view of the handle portion shown in Fig. 9. Although in each of the previously described embodiments the recessed portion 5d is formed on the upper surface of the handle 5 and the loosening preventive member 9 is fitted into the recessed portion 5d, as in the present or sixth embodiment, when a curved-surface-shaped projected portion 5i is formed in the neighborhood of the drive shaft mounting portion of the upper surface 5a of the handle 5 and a loosening preventive member 9 having a smooth curved surface 9i continuing with the curved surface of the projected portion 5i, then a similar effect can be obtained. Also, if an elastically deformable cap 50 for covering the head portion of a set screw 37 is removably mounted on the loosening preventive member 9, then the set screw 37 is not be exposed and thus a bait, dust arid the like are prevented from sticking to the head portion of the set screw 37.

Now, Figs. 11 and 12 are views which respectively show a seventh embodiment of the invention. In particular, Fig. 11 is a plan view of a handle portion of the seventh embodiment, while Fig. 12 is a sectional side view of the handle portion shown in Fig. 11. According to the seventh embodiment, a loosening preventive member 9 can be fixed to a handle 5 without using of a set screw. In part of the loosening preventive member 9, there is formed a cutaway portion 9j which includes a through hole adapted to be in communication with a through hole 5h formed in the handle 5 and, to the cutaway portion 9j, is fitted a securing member 52 which is level with a smooth curved surface 9a. The securing member 52 includes a pair of elastically deformable leg potions 52a which are to be inserted into the through hole formed in the cutaway portion 9j and into the through hole 5h formed in the handle 5, so that the leg portions 52a allow the securing member 52 to be secured to the lower surface of the handle 5. Due to this structure, according to the seventh embodiment, similarly to the above-mentioned fifth embodiment, the loosening preventive member 9 can be fixed to the upper surface of the handle 5 by one-touch operation and the loosening preventive member 9 can be removed easily by holding or picking the leg portions 52 front the lower surface side of the handle 5.

Now, Fig. 13 is a view of an eighth embodiment according to the invention. In the eighth embodiment, a loosening preventive member 9 including a smooth curved surface 9m extending from the peripheral edge portions of the member 9m to the central portion thereof is fitted deeply into a recessed portion 5d formed in an upper surface of the handle 5 and the loosening preventive member 9 is then fixed there from the lower surface side of the handle 5 by use of a set screw 37. Due to this, as shown by reference character 60 in Fig. 13, there are produced a stepped portion in the peripheral edge portion of the loosening preventive member 9 with respect to the upper surface 5a of the handle 5. However, even when such stepped portion is produced, a fishline is able to slide from the upper surface 5a of the handle 5 along the smooth surface 9m so that the fishline is prevented from getting twined around the loosening preventive member 9.

Fig. 14 is a view of a ninth embodiment according to the invention. In the ninth embodiment, without forming any recessed or projected portion on the upper surface 5a of a handle 5, a loosening preventive member 9 including a smoothly curved surface 9n extending from the peripheral edge portion of the member 9 to the central portion thereof is fixed to the upper surface 5a of the handle 5 by a set screw 37. The peripheral portion of the loosening preventive member 9 is respectively formed very thin so that no stepped portion is produced with respect to the upper surface 5a of the handle 5. This structure eliminates the need to form any recessed or projected portion on the upper surface 5a of the handle 5.

Now, Fig. 15 is a view of a tenth embodiment according to the invention. In the tenth embodiment, a relatively high surface 5p parallel to the upper surface 5a of the handle 5 is provided in the portion of the handle 5 that is located in the mounting portion to the drive shaft, and a loosening preventive member 9 including a smoothly curved surface 9p extending from the peripheral edge portions of the member 9 to the central portion thereof is fixed to the high surface 5p by a set screw 37. this structure can also prevent the fishline from getting twined around the member 9.

Figs. 16 and 17 respectively show an eleventh embodiment according to the invention. In particular, Fig. 16 is a plan view of a handle portion of a fishing reel, in which a cover member mounted to a handle 5 is cut away, and Fig. 17 is a sectional side view of the above handle portion. In the eleventh embodiment, a threaded member 35 is prevented from loosening by a loosening preventive member 90 screwed to the upper surface of the handle 5 by a screw 91. And, the threaded member 35 and loosening preventive member 90 are covered with a cover member 95 including a curved surface 95a which is continuously level with a curved surface 5b formed in the upper surface 5a of the handle 5. That is, the cover member 95 used in the eleventh embodiment is a member which is used to protect the handle mounting portion of the fishing reel and does not have a function to prevent the threaded member 35 from loosening. The cover member 95, for example, as in the above-mentioned fifth embodiment, is removably fixed to the upper surface of the handle 5. With use of this structure as well, in the handle mounting portion, during the winding operation of the handle, there is no possibility that the fingers can be damaged even if they accidentally touch the loosening preventive member 90, and it is possible to prevent a bait, dust and the like from sticking to the member 90, so that a fishline is prevented from getting twined around the member 90. Further, the portion for preventing the loosening of the threaded member 35 can be protected against shocks produced when it drops down or given by other things as well as against external forces.

Figs. 18 to 20 show a twelfth embodiment of the invention. In the fifth and eleventh embodiments, the loosening preventive member 9 or the cover member 95 is elastically fixed to the handle 5 with the use of the combination of the elastic securing portion 9h or 95b and the through hole 5h. In stead of this arrangement, the twelfth embodiment employs the engagement between an elastic securing member 109h formed on the back surface of the peripheral portion of the loosening preventive member 9 and an engagement groove 105h formed in the peripheral portion of the handle 5. In this embodiment, four pairs of securing members 109h and the engagement grooves 105h in order to elastically retain the loosening preventive member 9 onto the handle 5 as best shown in Fig. 20. Although the loosening preventive member 9 of this embodiment is designed as being relatively larger in size in comparison with the loosening preventive member 9 of the fifth embodiment because of the provision of the securing portion 109h at the peripheral portion thereof, the outer surface of the loosening preventive member 9 and the curved surface 5b of the handle 5 cooperatively define a smooth outer surface which provides the same advantages or effects as those produced by the afore-mentioned embodiments. In addition, the arrangement of the twelfth embodiment that the elastic securing member 109h is formed on the peripheral portion and the engagement groove 105h is also formed in the peripheral portion to correspond to the securing portion 109h, can also be applicable to the mounting arrangement of the cover member 95 onto the handle 5 as in the eleventh embodiment.

Although the embodiments of the invention have been described heretofore, the invention is not limited to the above-mentioned embodiments but, for example, as will be described below, various changes are possible. In the above-mentioned respective embodiments, the methods for mounting the loosening preventive member 9 (or cover member 95) to the handle 5, and the shapes of the handle 5 and loosening preventive member 9 (cover member 95) can be combined with those of another embodiment arbitrarily. Although the threaded member 35 has been described that it is made up of a nut, it may be of a threaded member with a head portion arid may be threadedly engaged with a female thread portion to be formed in the drive shaft 4. In the description of the above-mentioned embodiments, as the fishing reel, a dual bearing type reel is used. However, the invention can also apply to other types of reels similarly. In the illustrated embodiments, the loosening preventive member 9, recessed portion 5d and the like are respectively formed in an elliptical shape. However, this is not limitative but other shapes can also employed. Also, the shapes of the respective members used to prevent the rotation and loosening of the handle 5 or to fasten the handle 5 can also be changed variously.

According to the fishing reel of the invention, since the loosening preventive member, when being mounted and fixed to the handle, forms a smooth outer surface in cooperation with an upper surface of the handle, or since the loosening preventive member is covered with a cover member which forms a smooth outer surface in cooperation with the upper surface of the handle, when fingers may slip off the handle knob, even if the fingers accidentally touch the neighboring portion of the loosening preventive member, the fingers can be protected against damage, so that a safe and smooth winding operation is possible, and the fishline is prevented from getting twined around the loosening preventive member. Also, the invention prevents the slime of fish, bait, dust and the like from sticking to the loosening preventive member as much as possible and thus allows pleasant fishing. Further, since the handle and loosening preventive member provide a smoothly matched

shape as a whole, the invention is improved in design as well.

## Claims

1. A handle fixing structure for fixing a handle onto a drive shaft of a fishing reel, said structure comprising:

   a threaded member for threadingly fixing said handle onto an end of said drive shaft;

   a loosening preventive member mounted onto an upper surface of said handle for preventing said threaded member from loosening, wherein an outer surface of said loosening preventive member is formed as a smooth surface extending from a peripheral edge portion of said loosening preventive member to a central portion thereof.

2. A structure as set forth in claim 1, wherein a recessed is formed in said upper surface of said handle for supporting said loosening preventive member on said handle.

3. A structure as set forth in claim 2, wherein said loosening preventive member is pressure-fitted to said recess.

4. A structure as set forth in claim 2, wherein said loosening preventive member is fixed to said handle by means of a screw.

5. A structure as set forth in claim 2, wherein said loosening preventive member is fixed to said handle by an elastically deformable securing member.

6. A structure as set forth in claim 1, wherein said loosening preventive member is fixed to said handle by means of a screw.

7. A structure as set forth in claim 6, wherein said loosening preventive member is formed with a recess for accommodating said screw so that said screw is prevented from projecting from said outer surface.

8. A structure as set forth in claim 7, further comprising: a cover attached to said recess for covering said screw.

9. A structure as set forth in claim 8, wherein a surface of said cover is flush with said outer surface of said loosening preventive member.

10. A structure as set forth in claim 1, wherein said loosening preventive member is fixed to said handle by means of an elastically deformable securing member.

11. A structure as set forth in claim 10, wherein said securing member is integral with said loosening preventive member.

12. A structure as set forth in claim 10, wherein said securing member is removable from said loosening preventive member, and said loosening preventive member is formed with a recess for receiving said securing member such that a surface of said securing member is flush with said outer surface of said loosening preventive member.

13. A structure as set forth in claim 1, wherein said handle defines a flat surface onto which said loosening preventive member is attached.

14. A structure as set forth in claim 1, wherein said handle is formed with a curved surface which merges with said outer surface of said loosening preventive member.

15. A structure as set forth in claim 1, wherein said upper surface of said handle and said outer surface of said loosening preventive member cooperatively define a conical and relatively flat surface.

16. A handle fixing structure for fixing a handle onto a drive shaft of a fishing reel, said structure comprising:

   a threaded member for threadingly fixing said handle onto an end of said drive shaft;

   a loosening preventive member mounted onto said handle for preventing said threaded member from loosening,

   a cover member mounted on an upper surface of said handle for covering said loosening preventive member, wherein an outer surface of said cover member is formed as a smooth surface extending from a peripheral edge portion of said cover member to a central portion thereof.

17. A handle fixing structure for fixing a handle onto a drive shaft of a fishing reel, said structure comprising:

   a threaded member for threadingly fixing said handle onto an end of said drive shaft;

   a loosening preventive member mounted onto said handle for preventing said threaded member from loosening; and

   at least one elastically deformable member for fixing said loosening preventive member onto said handle.

18. A structure as set forth in claim 17, wherein said at least one elastically deformable member is integral with said loosening preventive member.

19. A structure as set forth in claim 18, wherein each of said at least one elastically deformable member is elastically engaged with a through hole formed in said handle.

20. A structure as set forth in claim 18, wherein each of said at least one elastically deformable member is elastically engaged with an engagement groove formed in a peripheral portion of said handle.

FIG. 1

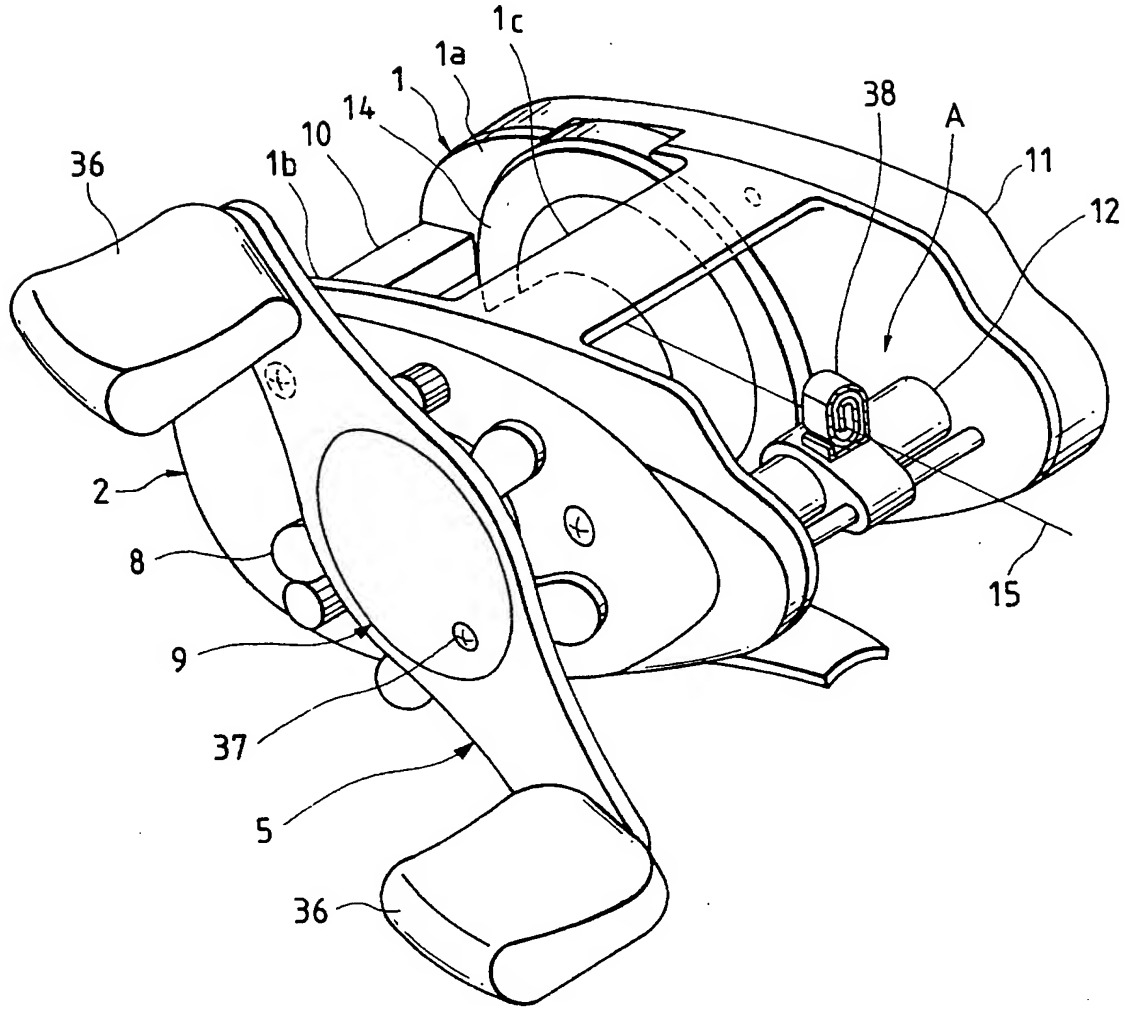


FIG. 2

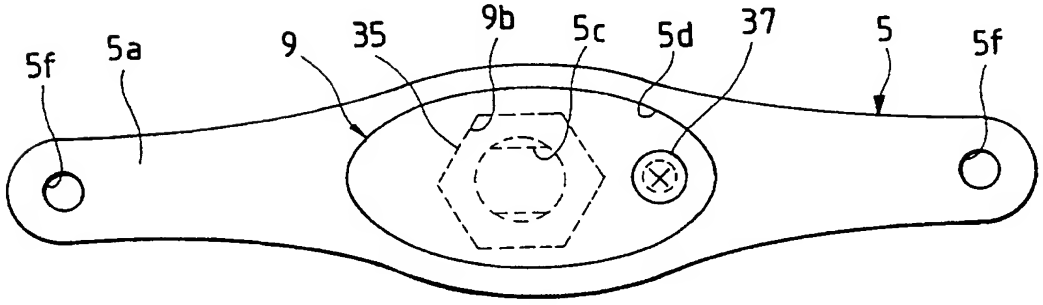

FIG. 3

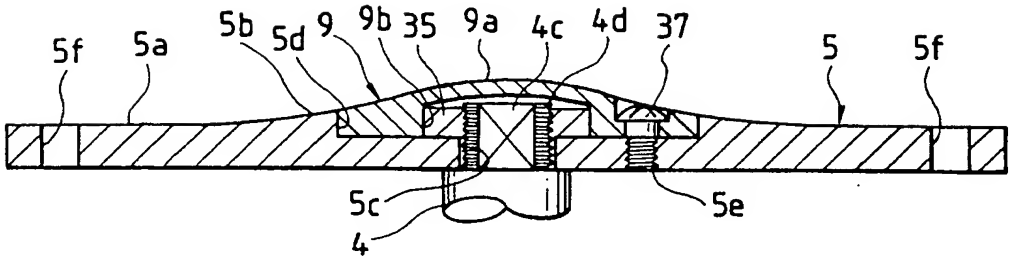
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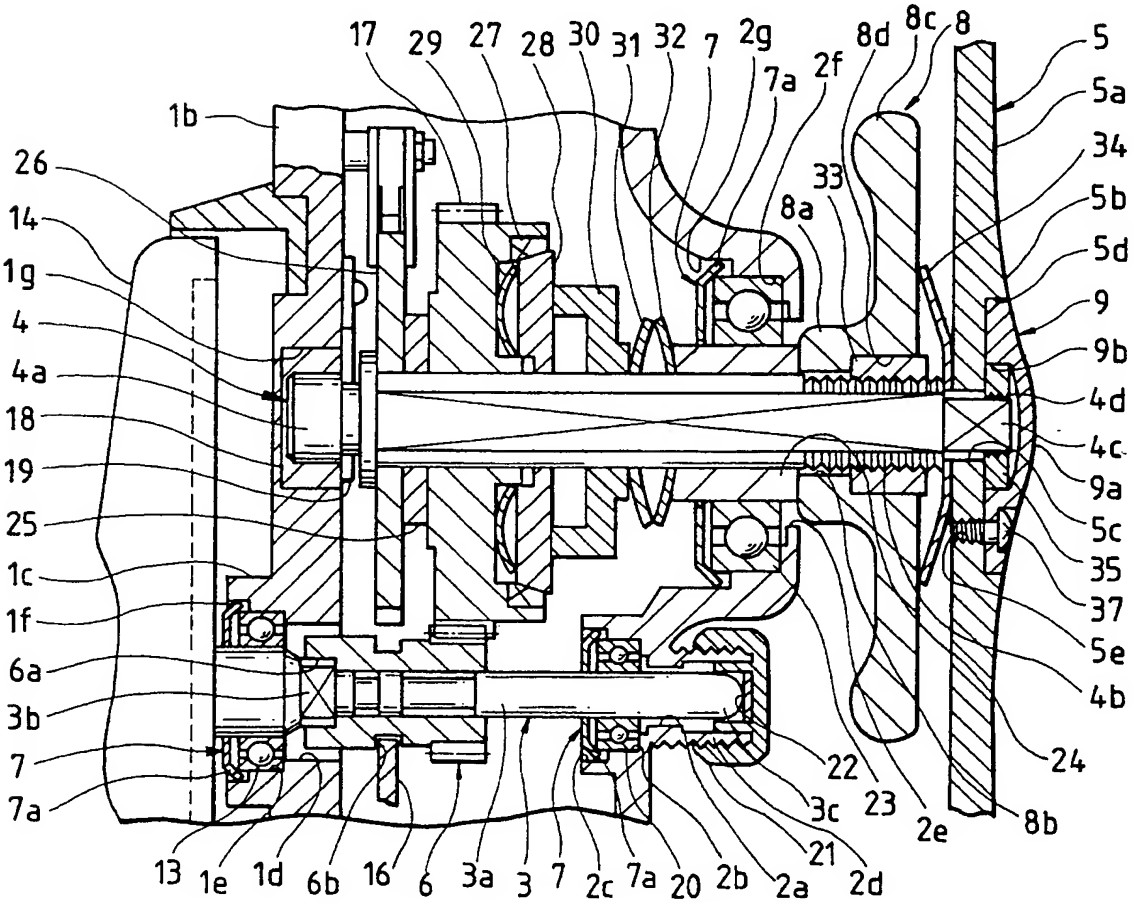
FIG. 4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14
1g
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4a
18
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1c
1f
6a
3b
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7a
33
8a
22
3c
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2e
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FIG. 5

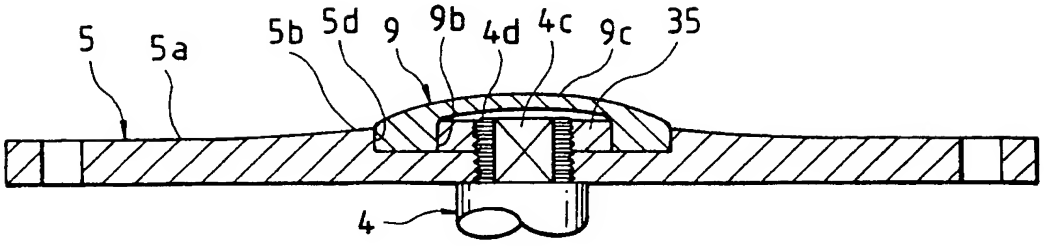



FIG. 6

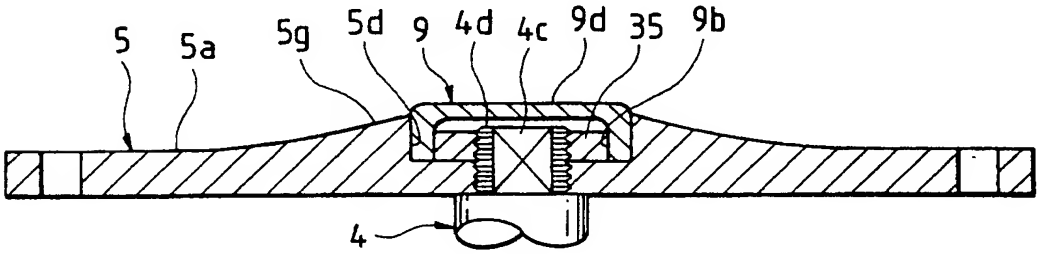



FIG. 7

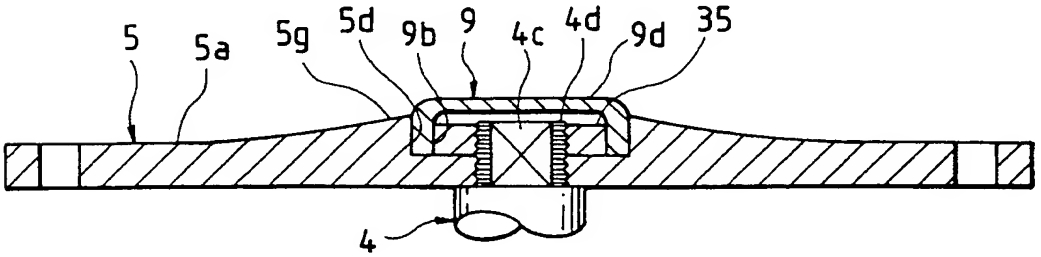


FIG. 8

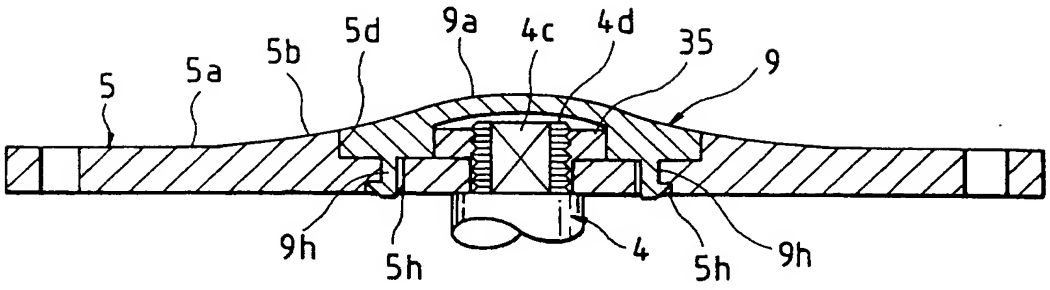



FIG. 9

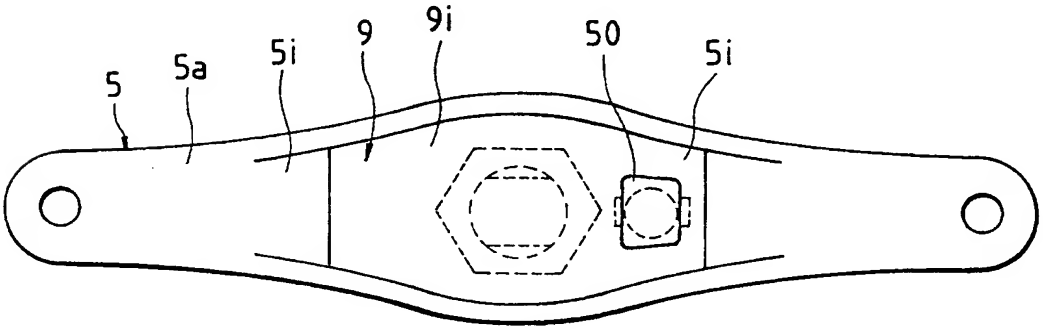



FIG. 10

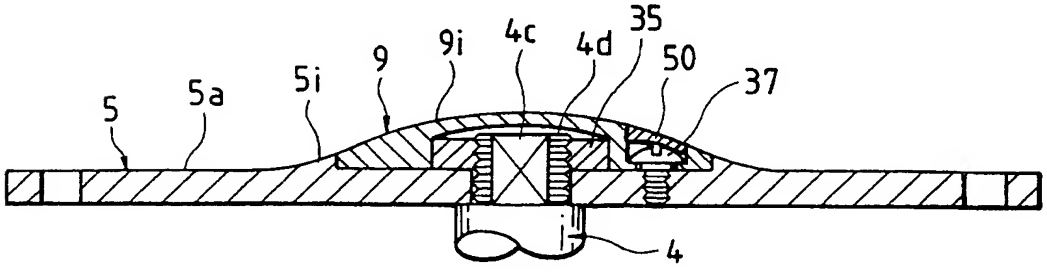


FIG. 11

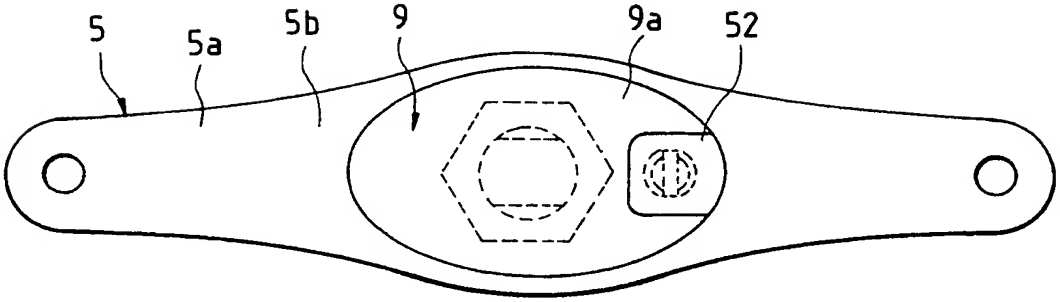



FIG. 12

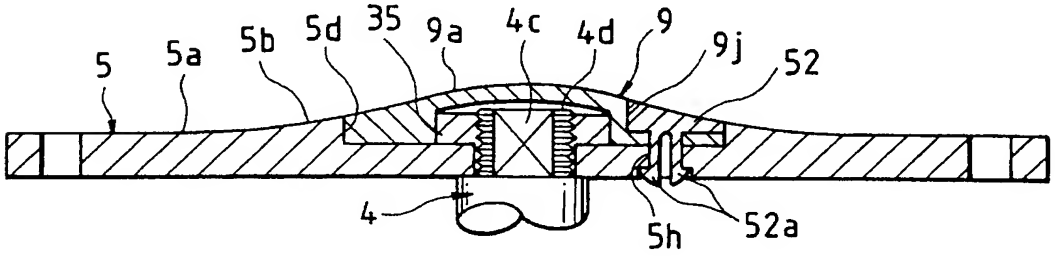



FIG. 13

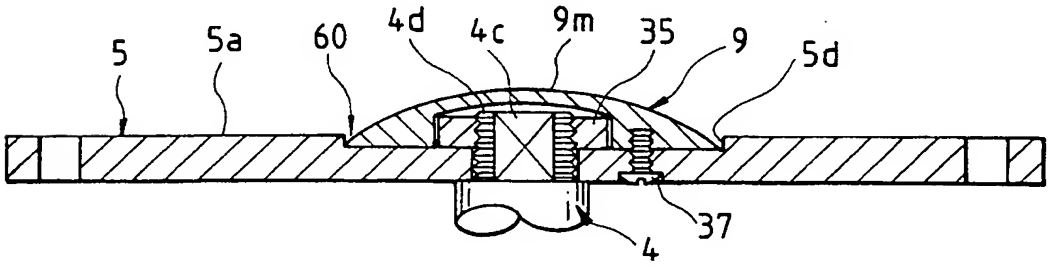


FIG. 14

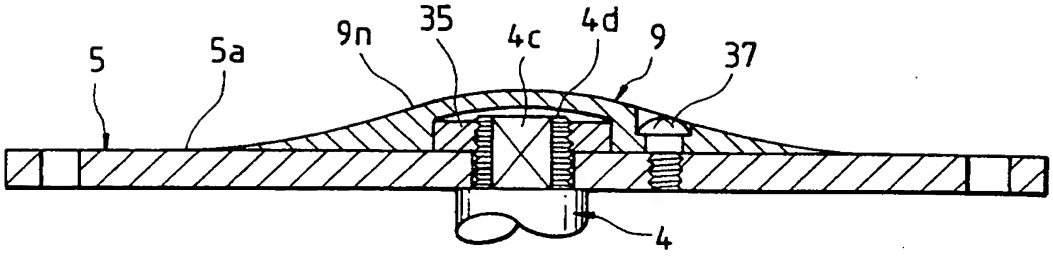



FIG. 15

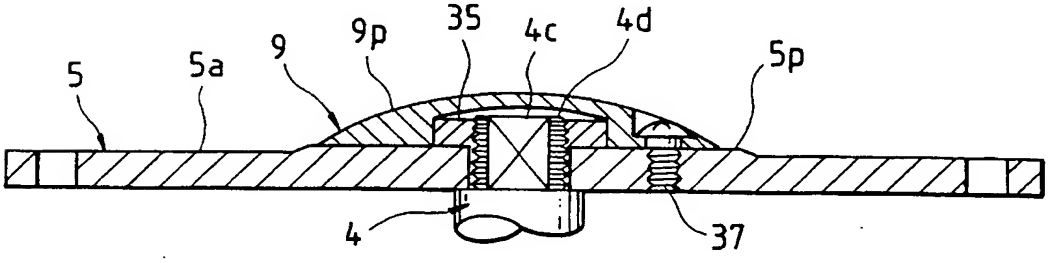


FIG. 16

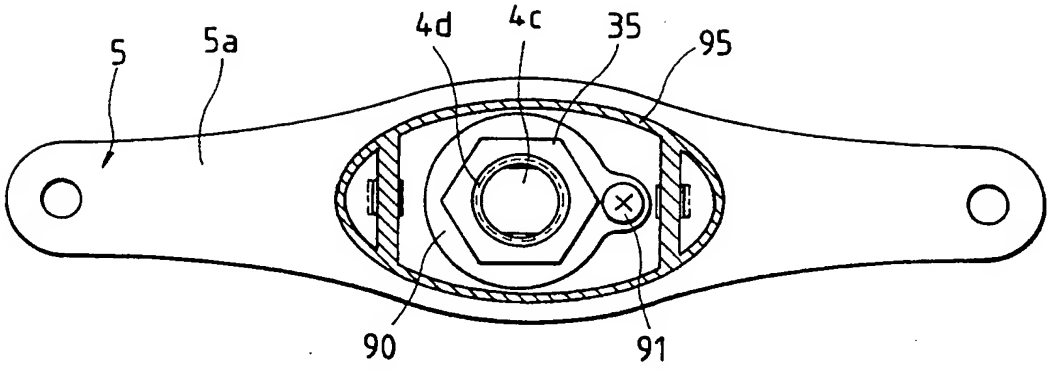



FIG. 17

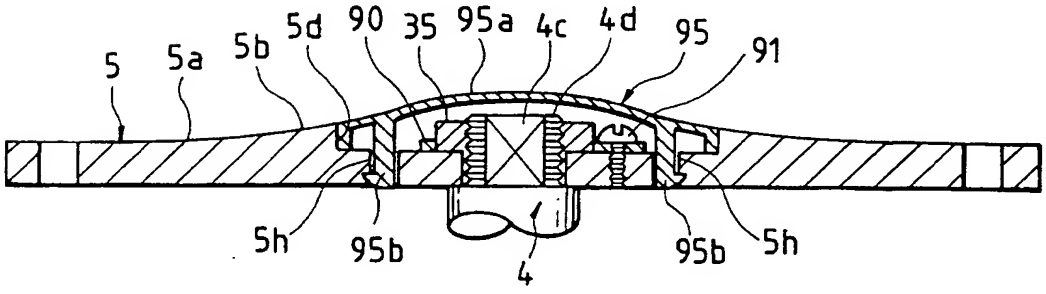


FIG. 18

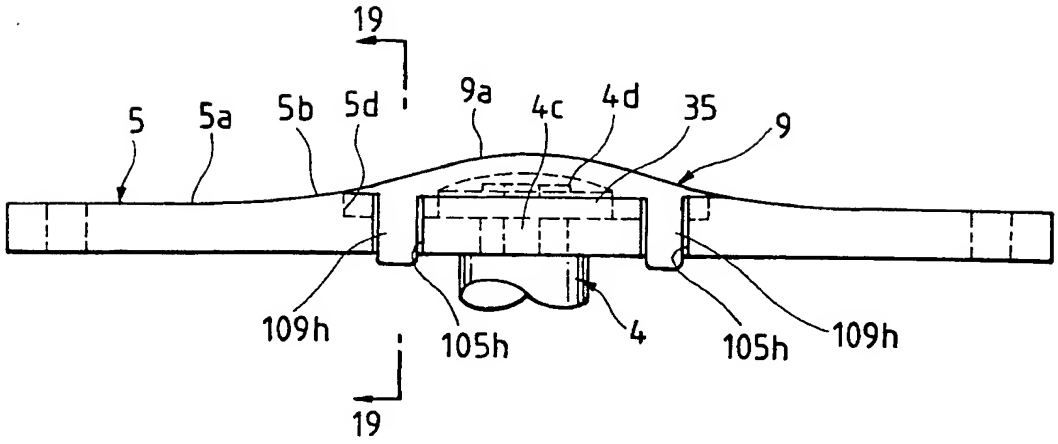



FIG. 19

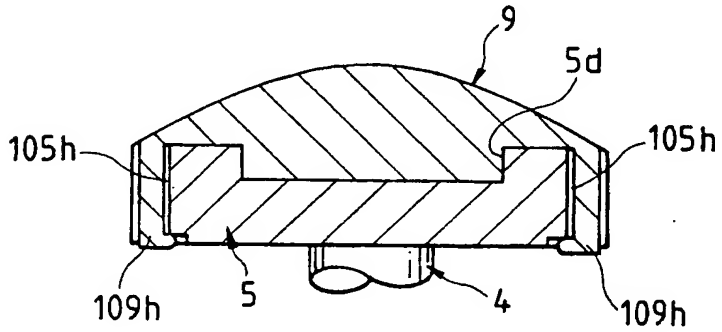
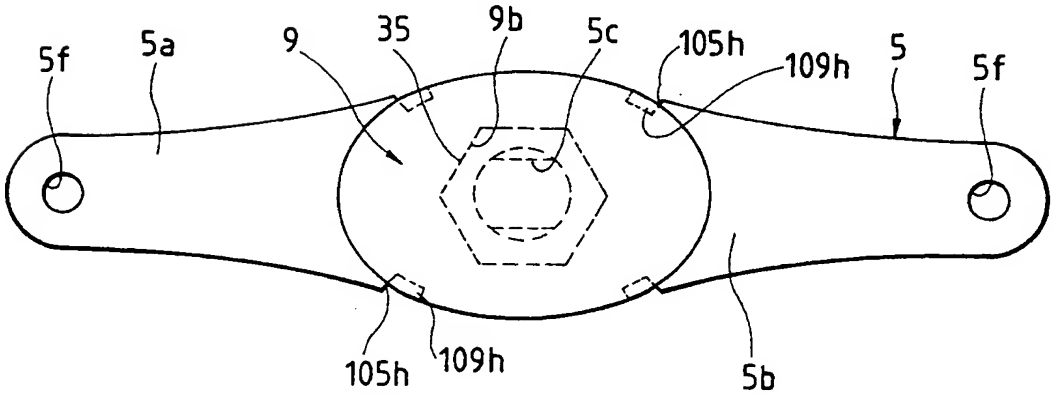



FIG. 20



European Patent Office

# EUROPEAN SEARCH REPORT

Application Number
EP 94 11 8511

## DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int.Cl.6) |
|---|---|---|---|
| A | US-A-4 927 095 (YOUNG)<br>* figure 6 * | 1 | A01K89/015<br>A01K89/00<br>F16B39/10 |
| A | US-A-5 131 596 (SATO)<br>* figure 3 * | 1,6,13 | F16B37/14 |
| A | GB-A-2 261 147 (SHIMANO INC)<br>* figure 4 * | 1 | |
| A | US-A-2 189 654 (RIEF)<br>* the whole document * | 17,18 | |

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

A01K
F16B

The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| THE HAGUE | 13 February 1995 | Verdoodt, S |

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

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| Ａ０１Ｋ　89/015 | | Ａ０１Ｋ　89/015 | Ｄ |

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最終頁に続く

(54)【発明の名称】　魚釣用リール



(57)【特許請求の範囲】
【請求項１】　スプールを巻取り駆動する駆動軸の端部にハンドルをネジ部材で螺合固定し、このネジ部材の緩み止めを行う緩み止め部材をハンドルに固定した魚釣用リールにおいて、
前記ハンドルの上面に装着される前記緩み止め部材の周縁部から中心部にかけての表面形状を滑らかな形状に形成すると共に、前記緩み止め部材を前記ハンドルに固定する係止部を、前記緩み止め部材の表面から突出しないように設けたことを特徴とする魚釣用リール。
【請求項２】　前記ハンドル上面に凹部を形成し、この凹部内に前記緩み止め部材を取り付け固定したことを特徴とする請求項１に記載の魚釣用リール。
【請求項３】　スプールを巻取り駆動する駆動軸の端部にハンドルをネジ部材で螺合固定し、このネジ部材の緩み止めを行う緩み止め部材をハンドルに固定した魚釣用リールにおいて、
前記緩み止め部材を覆い隠すカバー部材を前記ハンドルの上面に固定すると共に、前記カバー部材の周縁部から中心部にかけての表面形状を滑らかな形状に形成したことを特徴とする魚釣用リール。



【発明の詳細な説明】
【０００１】
【産業上の利用分野】この発明は、スプールを巻取り駆動する駆動軸の端部に、ハンドルをネジ部材で螺合固定し、ネジ部材を緩み止めした魚釣用リールに関する。
【０００２】
【従来の技術】従来、駆動軸の端部に取り付けられるハンドルは、ナットによって締め付け固定されており、このナットには、その緩みを防止する緩み止め部材が取り

付けられている。このようなナットの緩みを防止する緩み止め部材として、例えば、実開昭５５－１０８８７３号公報や実開平３－７４２６６号公報には、ハンドル上面から突出して取り付け固定されたものが開示されている。

【０００３】

【発明が解決しようとする課題】上記公報に開示されている緩み止め部材は、いずれもハンドルの上面から突出しているため、ハンドルの巻き取り操作中に誤って指が触れてケガをしたり、また、魚のヌメリ、エサ、ゴミ等が付着しやすく、糸絡みが発生しやすい等の問題がある。

【０００４】この発明は、ハンドルの巻き取り操作中に、誤って指が触れてもケガをせず、また、エサ、ゴミ等の付着を極力防止でき、糸絡みが発生しない、快適な魚釣りができる、魚釣用リールを提供することを目的とする。

【０００５】

【課題を解決するための手段】前記課題を解決するために、本発明は、スプールを巻取り駆動する駆動軸の端部にハンドルをネジ部材で螺合固定し、このネジ部材の緩み止めを行う緩み止め部材をハンドルに固定した魚釣用リールにおいて、前記ハンドルの上面に装着される前記緩み止め部材の周縁部から中心部にかけての表面形状を滑らかな形状に形成すると共に、前記緩み止め部材を前記ハンドルに固定する係止部を、前記緩み止め部材の表面から突出しないように設けたことを特徴としている。

【０００６】また、本発明は、スプールを巻取り駆動する駆動軸の端部にハンドルをネジ部材で螺合固定し、このネジ部材の緩み止めを行う緩み止め部材をハンドルに固定した魚釣用リールにおいて、前記緩み止め部材を覆い隠すカバー部材を前記ハンドルの上面に固定すると共に、前記カバー部材の周縁部から中心部にかけての表面形状を滑らかな形状に形成したことを特徴としている。

【０００７】

【作用】ハンドルの上面に装着される緩み止め部材は、その周縁部から中央部にかけての表面形状が滑らかに形成され、かつ緩み止め部材をハンドルに固定する係止部が前記緩み止め部材の表面から突出しないように設けられており、リールを使用するにあたり、釣糸、指、エサ等が引っ掛からないように構成されている。あるいは、緩み止め部材を覆い隠すように、カバー部材がハンドルの上面に固定されており、このカバー部材は、その周縁部から中央部にかけての表面形状が、リールを使用するにあたり、釣糸、指、エサ等が引っ掛からないように、滑らかに形成されている。

【０００８】

【実施例】以下、本発明の実施例を説明する。図１乃至図４は、本発明の第１の実施例を示している。なお、本発明の実施例を説明するにあたり、魚釣用リールとして、両軸受型リールで説明を行う。図１は、両軸受型リールの斜視図、図２は、ハンドル部分の平面図、図３は、ハンドル部分の断面側面図、そして、図４は、図１に示す両軸受型リールの、要部拡大断面平面図である。



【０００９】リール本体１の左右両側枠１ａ，１ｂは、複数本の支柱１０及び保持板１ｃで平行に保持されており、これらの側枠１ａ，１ｂの外側には、夫々リール側板１１，２が取り付けられている。両側枠１ａ，１ｂには、釣糸案内装置Ａの案内筒１２の両端が図示していない構造で回り止めされている。また、両側枠１ａ，１ｂには、図示しない軸受および軸受１３によって、スプール軸３が回転自在に軸承されており、このスプール軸３は、クラッチ機構と歯車輪列機構を介して、駆動軸４に取り付けられたハンドル５によって回転されるように構成されている。スプール軸３には、左右両側枠１ａ，１ｂ間に配されるスプール１４が固定されており、その巻胴部外周には釣糸１５が巻回されている。

【００１０】軸受１３の右側の右側枠１ｂと、リール側板２間のスプール軸３の細径部３ａには、ピニオン６が軸線方向に移動自在に嵌合されている。スプール軸３には係合部３ｂが、ピニオン６には係合部６ａが形成されており、クラッチ結合の係合・離脱が、ピニオン６に形成された周溝６ｂに嵌められたクラッチプレート１６で行われる。このように、スプール軸３の係合部３ｂとピニオン６の係合部６ａとピニオン６の周溝６ｂに嵌められたクラッチプレート１６とによってクラッチ機構が構成されている。このピニオン６には、駆動軸４に回転自在に嵌合された駆動歯車１７が噛合されている。

【００１１】右側枠１ｂの左内側に軸筒部１ｃが突出形成されており、軸筒部１ｃの内側に透孔１ｄと凹部１ｅ，１ｆが形成されている。凹部１ｅには、前記軸受１３が嵌合されて取り付けられ、凹部１ｆに保持部材７の舌片７ａが係止されて軸受１３が保持部材７で抜け止めされている。また、右側枠１ｂの右外側には、凹部１ｇが形成されて軸受１８が嵌合され、前記駆動軸４の一端４ａが回転自在に嵌合されて抜け止め板１９で抜け止めされている。

【００１２】リール側板２には、透孔２ａと凹部２ｂ，２ｃが形成されている。この凹部２ｂには、軸受２０が嵌合されて取り付けられ、凹部２ｃに保持部材７の舌片７ａが係止されて軸受２０が保持部材７で抜け止めされている。この軸受２０には、スプール軸３の細径の他端３ｃが軸承されている。また、リール側板２の右外側には、外周に雄螺子が形成された軸筒部２ｄが突出形成されている。この雄螺子には、内側底面にスラスト軸受２２が固定されたカバーツマミ２１が螺合しており、スプール軸３の細径の他端３ｃがスラスト軸受２２に当接されている。

【００１３】リール側板２には、透孔２ｅと凹部２ｆ，２ｇが形成されている。凹部２ｆには、軸受２３が嵌合

されて取り付けられ、凹部２ｇに前記と同形の保持部材７の舌片７ａが係止されて軸受２３が保持部材７で抜け止めされている。軸受２３で駆動軸４が、駆動軸４の軸線方向に移動自在に回り止め嵌合されたカラー２４を介して軸承されている。

【００１４】駆動軸４に回転自在に嵌合された駆動歯車１７の左側の駆動軸４には、摩擦板２５が嵌合され、その左側に爪車２６が駆動軸４に回り止め嵌合されている。駆動歯車１７の右側には、摩擦板２７が固定されており、この摩擦板２７に駆動軸４に回り止め嵌合された摩擦円板２８が当接されている。駆動歯車１７と摩擦円板２８との間には、湾曲発条２９が挿入され、摩擦円板２８の右側には、駆動軸４に回り止め嵌合された押圧盤３０が当接されている。この押圧盤３０の右側には、駆動軸４に回り止めされた発条３１，３２が当接されており、発条３２の右側には、前記カラー２４が当接されている。このカラー２４の右側には、調節体８の係合部８ａが当接されている。これら摩擦板２７と摩擦円板２８と湾曲発条３１，３２とカラー２４とによって制動部材が構成されている。

【００１５】前記調節体８には、前記カラー２４に当接する係合部８ａと中心透孔８ｂと手の指で回動操作する操作部８ｃと中央部に多角形の嵌合凹部８ｄが形成されている。この多角形の嵌合凹部８ｄには、駆動軸４の雄螺子部４ｂに螺合したナット３３が落し込みで嵌合されている。ナット３３の右側の駆動軸４の他端には、回り止め部４ｃと雄螺子部４ｄが形成されており、回り止め部４ｃに押圧発条３４とハンドル５が回り止め嵌合されて、ナットからなるネジ部材３５で抜け止めされている。

【００１６】前記釣糸案内装置Ａは、案内筒１２と、案内筒１２外周を左右に摺動する摺動子３８と、案内筒１２の中に収容された図示しないトラバースカム軸と、を有しており、このトラバースカム軸はハンドル５の回転操作によって回転される。また、前記クラッチプレート１６の操作によってスプール軸３の係合部３ｂとピニオン６の係合部６ａとがクラッチ結合された時において、ハンドル５が回転操作されると、スプール１４が取り付けられたスプール軸３は、駆動軸４と歯車輪列機構を介して回転される。この結果、釣糸を巻き取るようにハンドル５を回転操作すると、釣糸は、前記釣糸案内装置Ａの摺動動作によって、スプール１４に均等に巻回される。なお、ハンドル５の回転操作は、ハンドル５の両端部に夫々形成された透孔５ｆに回転自在に軸承されたハンドルノブ３６を把持することによって成される。

【００１７】次に、ハンドル５と駆動軸４との接続部分の構成について詳細に説明する。ハンドル５には、図２及び図３で示すように、上面５ａの中央領域が盛り上がるように曲面５ｂが形成されており、その盛り上がった部分に楕円形の凹部５ｄが形成されている。凹部５ｄに



は、その中央に小判形の透孔５ｃが形成されており、その近傍にネジ孔５ｅが形成されている。小判形の透孔５ｃには、駆動軸４の他端に形成された前記回り止め部４ｃが嵌合しており、これにより、ハンドル５は回り止めされた状態で駆動軸４に取り付けられる。回り止め部４ｃの外周部分には、雄螺子部４ｄが形成されており、この部分にナットからなるネジ部材３５が螺合される。この結果、ハンドル５は、駆動軸４に、回り止めされて締め付け、固定される。

【００１８】このネジ部材３５には、その緩みを防止するための緩み止め部材９が係合される。緩み止め部材９は、蓋状に構成されており、前記ハンドル５の上面５ａの中央領域に形成された楕円形の凹部５ｄに嵌まるように、外形が楕円形状を成している。そして、その裏面には、ネジ部材３５に被さって緩みを防止する凹部９ｂが形成されている。この緩み止め部材９は、前記ネジ孔５ｅにビス３７を螺合することによってハンドル５に固定される。

【００１９】緩み止め部材９には、周縁部から中心にかけて盛り上がるように滑らかな曲面９ａが形成されており、緩み止め部材９をハンドル５に固定すると、図３に示すように、ハンドル５の曲面５ｂと連続した滑らかな面が形成される。このように、ハンドルの上面５ａから連続する滑らかな面が形成されることによって、指やエサ、ゴミや釣糸が引っ掛かるようなことはない。

【００２０】具体的に説明すると、ハンドル部分が上記したように構成された魚釣用のリールによれば、緩み止め部材９がハンドル５の上面５ａから従来のように突出しないように取付け固定されるので、ハンドルを素早く巻き取る時、又は、ハンドルノブ３６から指が水分や油の付着で滑った時等において、緩み止め部材９の近辺に指が誤って触れても、指を傷付けることなく、安全かつスムーズな巻き取り操作が可能となる。また、緩み止め部材９への魚のヌメリ、エサ、ゴミ等々の付着を極力防止することができると共に、そのようなものが付着しても極めて容易に拭き取ることができ、快適な魚釣りができる。さらに、ハンドル５と緩み止め部材９が全体的に一体感のある形状となるので、デザイン面においても向上する。

【００２１】特に、この実施例のように、ハンドル５の上面に形成された凹部５ｄ内に緩み止め部材９を取り付け、ハンドルの上面５ａと緩み止め部材９の上面が、略同一面で段差のない連続的な形状とすることにより、緩み止め部材の周縁部において糸絡み、指を傷付けることを極力防止できる。また、緩み止め部材をハンドルの上面に固定する係止部（この実施例では、ビス３７）を、緩み止め部材の表面から突出しないように構成することによって、魚のヌメリ、エサ、ゴミ等の付着をより確実に防止できる。

【００２２】次に、本発明に含まれるその他の実施例に

ついて説明する。以下の実施例においては、いずれもハンドル部分のみが示されている。図５は、第２実施例を示す図である。この実施例では、ハンドル５の楕円形の凹部５ｄに、緩み止め部材９が圧入等で嵌合固定されている。緩み止め部材９の上面形状は、前記実施例同様、周縁部から中心部にかけて滑らかな面となる曲面９ｃで構成されている。この実施例では、図に示すように、曲面９ｃは、ハンドル５の曲面５ｂと同一面でなく、外側に膨出するように形成されているが、このように構成しても、前記実施例と同様な効果が得られる。また、係止部としてビス等を用いないため、緩み止め部材９のハンドル上面への固定が容易になり、係止部におけるエサ、ゴミ等の入り込みを防止できる。

【００２３】図６は、第３実施例を示す図である。この実施例では、ハンドル５の楕円形の凹部５ｄに、緩み止め部材９が圧入等で嵌合固定されている。緩み止め部材９の上面は、滑らかとなる水平面９ｄで構成されている。このように構成しても、前記第２実施例と同様な効果が得られる。

【００２４】図７は、第４実施例を示す図である。この実施例では、ハンドル５の楕円形の凹部５ｄに、緩み止め部材９が圧入等で嵌合固定されており、緩み止め部材９の上面は、滑らかとなる水平面９ｄで構成されている。この実施例では、ハンドル５の上面５ａの中央の曲面５ｇは、前記第３実施例よりも低く形成されている。ハンドル５の上面５ａと緩み止め部材９の上面との間にこの程度の段差があっても、曲面５ｇ及び滑らかな水平面９ｄにより、糸の絡み等を有効に防止することができる。また、図示されていないが、ハンドル５の上面５ａに曲面を形成すること無く水平状とし、その凹部５ｄに水平面９ｄを有する緩み止め部材９を嵌合させて、両者を面一とすれば、釣糸等は全く引っ掛かることはなく、より好ましくなる。

【００２５】図８は、第５実施例を示す図である。この実施例では、緩み止め部材９のハンドル上面への固定を、より容易にしている。ハンドル５の凹部５ｄ内に、透孔５ｈを形成すると共に、緩み止め部材９の裏側に、透孔５ｈに挿入される弾性変形可能な弾性係止部９ｈを形成する。このように構成すれば、ワンタッチで緩み止め部材９をハンドル５に固定することができ、かつハンドル５の下面側から弾性係止部９ｈを摘むことによって、容易に取り外すことができる。また、緩み止め部材９の表面部に、止めビスによる露出した係止部を設ける必要がなくなり、この部分にエサ、ゴミ等が付着するようなことはない。

【００２６】図９及び図１０は、第６実施例を示す図であり、図９は、ハンドル部分の平面図、図１０は、その断面側面図である。前記実施例では、いずれもハンドル５の上面に凹部５ｄを形成し、この凹部５ｄに緩み止め部材９を嵌合させていたが、この実施例のように、ハンドル５の上面５ａの駆動軸装着部近傍に曲面状の凸部５ｉを形成し、この凸部５ｉの曲面に連続するような滑らかな曲面９ｉを有する緩み止め部材９を取り付けても、同様な効果が得られる。また、緩み止め部材９に、止めビス３７の頭部をカバーする弾性変形可能なキャップ５０を着脱できるように装着すれば、止めビス３７が露出することなく、その頭部にエサ、ゴミ等が付着するようなことはない。



【００２７】図１１及び図１２は、第７実施例を示す図であり、図１１は、ハンドル部分の平面図、図１２は、その断面側面図である。この実施例では、緩み止め部材９のハンドル５への固定を、止めビスを用いることなく行えるようにしている。緩み止め部材９の一部に、ハンドル５に形成された透孔５ｈに連通する透孔を具備した切欠き部９ｊを形成し、この部分に滑らかな曲面９ａと面一となる係止部材５２を嵌合させる。この係止部材５２には、切欠き部９ｊに形成された透孔およびハンドル５に形成された透孔５ｈに挿入される一対の弾性変形可能な脚部５２ａが形成されており、係止部材５２をハンドル５の下面に係止させるようになっている。このような構成により、前記第５実施例と同様、緩み止め部材９は、ワンタッチでハンドル５の上面に固定することができ、かつハンドル５の下面側から脚部５２ａを摘むことによって、容易に取り外すことができる。

【００２８】図１３は、第８実施例を示す図である。この実施例では、ハンドル５の上面に形成された凹部５ｄに、周縁部から中心にかけて滑らかな曲面９ｍが形成された緩み止め部材９を深く嵌入させ、ハンドル５の下面側から緩み止め部材９を止めビス３７によって固定している。このため、図の符号６０で示すように、緩み止め部材９の周縁部において、ハンドル５の上面５ａと段差が生じるが、このような段差が生じても、釣糸は、ハンドル５の上面５ａから滑らかな曲面９ｍに沿って摺動可能であり、糸絡み等を防止することができる。

【００２９】図１４は、第９実施例を示す図である。この実施例では、ハンドル５の上面５ａに凹部や凸部を形成すること無く、周縁部から中心にかけて滑らかな曲面９ｎが形成された緩み止め部材９を、止めビス３７でハンドル５の上面５ａに固定している。緩み止め部材９の周縁部は、ハンドル５の上面５ａと段差が生じることなく、極めて肉薄状に形成されている。このように構成すれば、ハンドル上面に凹凸部を形成しなくても良い。

【００３０】図１５は、第１０実施例を示す図である。この実施例では、ハンドル５の駆動軸への装着部近傍に、上面５ａと平行な高い面５ｐを形成し、この高い面５ｐに周縁部から中心にかけて滑らかな曲面９ｐが形成された緩み止め部材９を止めビス３７で固定している。このように構成しても、釣糸の絡み等を防止することができる。

【００３１】図１６及び図１７は、第１１実施例を示す

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図であり、図１６は、ハンドル５に取り付けられたカバー部材を切取った平面図、図１７は、断面側面図である。この実施例では、ネジ部材３５は、ハンドル５の上面に止めビス９１によってネジ止めされた緩み止め部材９０によって、その緩みが防止される。そして、これらのネジ部材３５および緩み止め部材９０は、ハンドル５の上面５ａに形成された曲面５ｂと連続的に同一面となる曲面９５ａを具備したカバー部材９５によって覆われている。すなわち、この実施例におけるカバー部材９５は、ハンドル装着部を保護する部材であり、ネジ部材３５の緩み止めの機能を持たない。このカバー部材９５は、例えば、前記第５実施例のように、ハンドル５の上面に着脱自在に固定される。このように構成しても、ハンドル装着部において、ハンドルの巻き取り操作中に、誤って指が触れてもケガをせず、また、エサ、ゴミ等の付着が防止でき、糸絡みが発生するようなことはない。さらに、ネジ部材３５の緩み止め部を、落下や他物等からの衝撃、外力から保護することができる。

【００３２】以上本発明の実施例を説明したが、本発明は、上記実施例に限定されることはなく、例えば以下に述べるように、種々変形することができる。上述した各実施例において、緩み止め部材９（カバー部材９５）のハンドル５への装着方法、およびハンドル５、緩み止め部材９（カバー部材９５）の形状については、別の実施例の構成を任意に組み合わせて構成することができる。ネジ部材３５をナットからなるネジ部材としたが、頭部付きビスをネジ部材とし、駆動軸４に雌螺子部を形成して螺合しても良い。上記した実施例では、魚釣用リールとして、両軸受型リールを用いて説明したが、他の形式のリールに対して実施しても良い。緩み止め部材９、凹部５ｄ等は、上記実施例では楕円形状を成していたが、これ以外の形状であっても良く、また、ハンドル５の回り止め、締め付け、緩み止めを果たす各部材の形状についても種々変形できる。

【００３３】

【発明の効果】本発明の魚釣用リールによれば、緩み止め部材は、ハンドルの上面から突出しないように滑らかな面を具備し、かつ緩み止め部材の表面から突出しない係止部によってハンドルに取り付け固定されており、あるいは、緩み止め部材は、滑らかな面を具備したカバー部材によって覆われているため、ハンドルノブより指が滑った時等、緩み止め部材近辺に指が誤って触れても、＊

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＊指を傷つけること無く、安全かつスムーズな巻き取り操作が可能で、釣糸の糸絡みが防止できる。また、緩み止め部材への魚のヌメリ、エサ、ゴミ等々の付着を極力防止でき、快適な魚釣ができる。さらに、ハンドルと緩み止め部材が、全体的に一体感のある形状となり、デザイン面においても向上する。

【図面の簡単な説明】

【図１】本発明の第１実施例を示す図であり、魚釣用リールの内の両軸受型リールを示す斜視図。

【図２】図１に示すハンドル部分の平面図。

【図３】図１に示すハンドル部分の断面側面図。

【図４】図１に示す両軸受型リールの要部拡大断面平面図。

【図５】本発明の第２実施例を示す図であり、ハンドル部分の断面側面図。

【図６】本発明の第３実施例を示す図であり、ハンドル部分の断面側面図。

【図７】本発明の第４実施例を示す図であり、ハンドル部分の断面側面図。

【図８】本発明の第５実施例を示す図であり、ハンドル部分の断面側面図。

【図９】本発明の第６実施例を示す図であり、ハンドル部分の平面図。

【図１０】図９に示すハンドル部分の断面側面図。

【図１１】本発明の第７実施例を示す図であり、ハンドル部分の平面図。

【図１２】図１１に示すハンドル部分の断面側面図。

【図１３】本発明の第８実施例を示す図であり、ハンドル部分の断面側面図。

【図１４】本発明の第９実施例を示す図であり、ハンドル部分の断面側面図。

【図１５】本発明の第１０実施例を示す図であり、ハンドル部分の断面側面図。

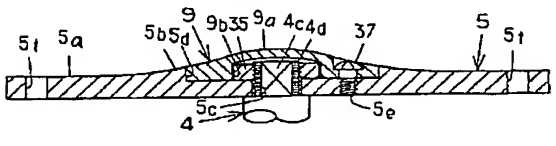
【図１６】本発明の第１１実施例を示す図であり、ハンドル部分に取り付けられたカバー部材を切り取った平面図。

【図１７】図１６に示すハンドル部分の断面側面図。

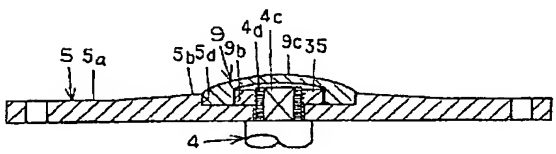
【符号の説明】

４…駆動軸、５…ハンドル、５ａ…ハンドルの上面、５ｄ…凹部、９…緩み止め部材、１４…スプール、３５…ネジ部材、９０…緩み止め部材、９５…カバー部材。

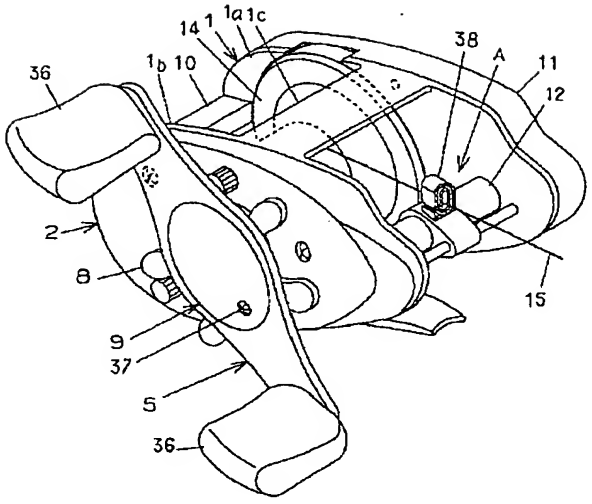
【図３】



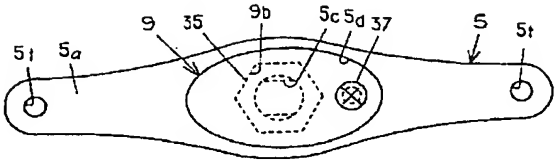

【図５】



【図１】




【図２】

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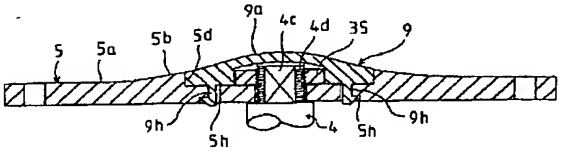


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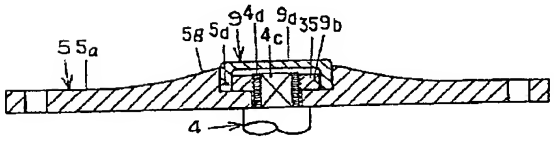


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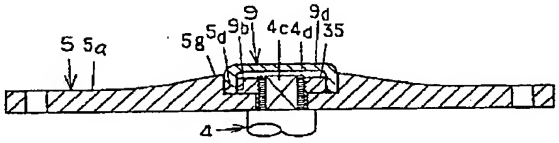
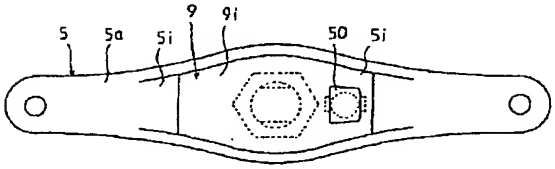
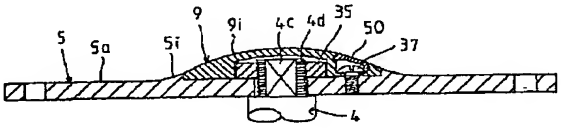


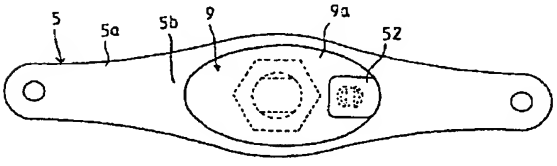

【図９】



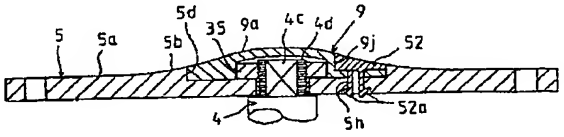

【図１０】



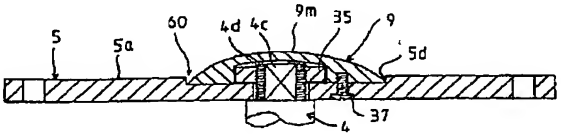

【図１１】




【図１２】




【図１３】



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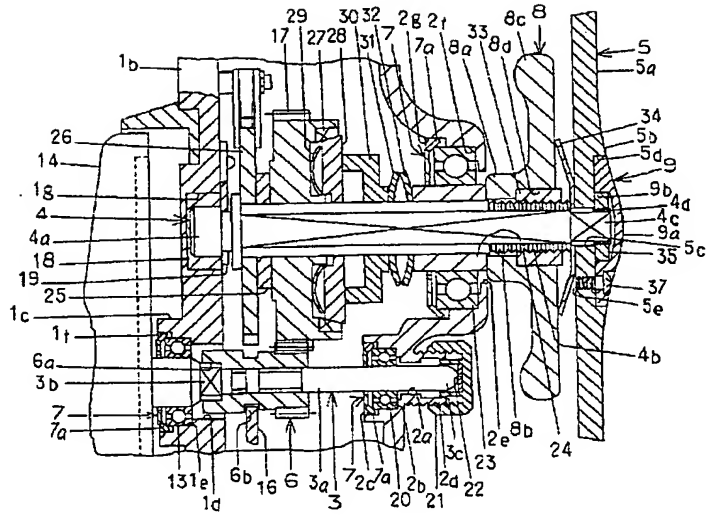


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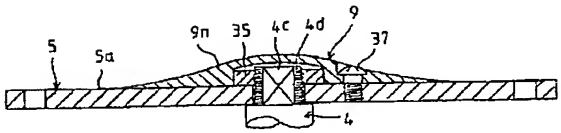


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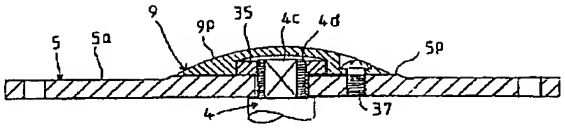


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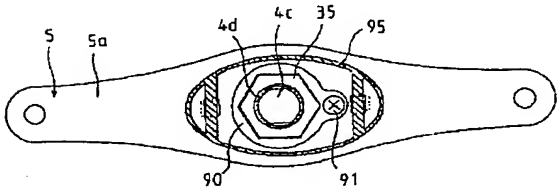
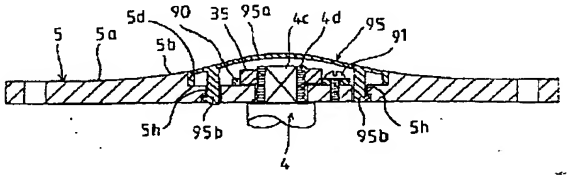



【図１７】

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(58)調査した分野(Int.Cl.⁷，ＤＢ名)
A01K　89/00 － 89/08